

UV FLUX MULTIPLICATION SYSTEM FOR STERILIZING AIR, MEDICAL DEVICES AND OTHER MATERIALS

Abstract of the Disclosure

[0162] An ultraviolet flux multiplying air sterilization chamber comprises inner surfaces having a diffuse reflective behavior. The sterilization chamber includes an inlet aperture and an outlet aperture for air to flow through said chamber and a light source emitting an ultraviolet light. Due to the reflectivity of the inner surfaces of the chamber, a flux of the ultraviolet light is multiplied by reflecting multiple times from the inner surfaces of the chamber. The inlet and outlet apertures are advantageously configured to reduce the amount of light that escapes from the chamber and increase the amount of photons available in the chamber. In an exemplary embodiment, packed arrays of fibers, spheres, or other small particles are placed at the inlet and/or outlet to the chamber. These packed arrays provide light scattering events such that the light incident on the packed arrays reflects back with high reflectivity.

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